

[McMullen Part V](#)

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McMullin V -- as observed by John T. Kuehn

September 23, 2021 Panel #2

Making Sense of “Things:” The Navy’s Torpedoes, Bureau of Ordnance, and Pacific Command in World War II”

Chair—Dr. Randy Papadopoulos of OPNAV Strategy and Concepts, filling in for Dr. Frank Hoffman, unexpectedly not available (must have been an National defense University brushfire to put out).

1. Frank Blaizich, Jr. National Museum of American History (Smithsonian)

“Newport’s 90-Pound Rube Goldberg Device: Reexamining the Mark 6 Mod 1 Exploder”

Frank Blaizich -Frank zoomed into the proceedings, for anyone who does not know him, he is 5 parts geek, 5 parts stand-up comic, and 10 parts all-around entertaining.

Frank looked at the Archeology and trivia of design of the Mark 1 exploder, as a prequel to his discussion of the infamous magnetic triggered Mark 6. Contact exploder discussion was provided as context. The lecture was extremely detailed and dense with lots of visual aids, which were needed.

From the Mark 1 discussion he went to the Mark 3, which was Extremely sensitive to contact. Live fires in 1917 for mark 3. All aimed at against uboats, no hits.

The theme emerged of inadequate testing in development stages for these high tech machines.

Warship design drove the magnetic imperative because of torpedo blisters, etc and other contact countermeasures allowed for by the Washington Naval Treaty for capital ships but useful on non-limited ships as well. Various approaches, one was using perturbations in Earth’s magnetic field as effected by the steel of the hull of a ship.

Prototype magnetic exploder tested in 1926. Second torpedo succeeded after one

of 2 shots was success against an old submarine. Said Frank about the success, “Basically we are talking about Magic.” (as in no real understanding about why the shot was a success...more good luck than any sort of design logic.) There was no data on magnetic fields in the environment. Newport finally decided to study magnetic fields in 1930.

Increased testing—in Carribean, old heavy cruiser and older destroyers used as target ships.

“it COULD work...”

1933—the Bureau of Construction and repaired (Bu C&R) offered a destroyer to sink, but only if BuORD refloated and repaired it. Highlighted the extreme parsimony of bureau bureaucracies that reigned inside the nascent mil-industrial complex during the Great Depression.

The program, Mark 6, so secret few knew about it. Mark 6 an object of art, build in a craftsmanship way not according to industrial mass production standardization processes. 90 pounds. Used bronze for higher voltages. Propulsion mechanism was extremely complex. Inadvertent firing side effect due to this engineering could occur during arming. I.e. arming the exploder might cause it to detonate prematurely. Used magnetic field perturbations to activate the exploder mechanism, about 20 feet.

Back up contact mode discussed based on evolution of mark 3 design. (the one that exploded due to “magic”)

Admiral Lockwood—later leader of submarine forces Pacific-- referred to Mark 6 as a “Rube Goldberg device”. Hard reality was the exploder as redesigned had never completed a live fire test. Mark 6 contact design never tested either. This was the exploder the US Navy went to war with.

2. Dr. Randy Papadopoulos, was the Secretary of the Navy Historian and now is in N-7 OPNAV Strategy and Concepts)

“Obstinate or Overwhelmed: Understanding the Bureau of Ordnance [BuOrd] in resolving the Mark 6 Exploder problems”

First area Randy addressed was logistics, retail problems not converted to wholesale solutions. 10 July, 1942/3?--- *Tinosa* (SS), launched 15 torpedoes, 10 hit,

did not sink the target. Production challenges also prevented fixing this problem.

Two related problems - torpedoes could?(this might be could not) defeat contact countermeasures. Two, practice was to conserve torpedoes because of shortages. So data was slow coming in. Could not build torpedoes fast enough for the US submarine force. Loss of over half of Asiatic Fleet's torpedoes at Cavite in first week of war due to air attack by Japanese did not help. Let to even more conservation in the theater of war where torps most likely to be used most at that stage of the war.

Attempts to ramp up production did not solve the problem.

Only could build 2500 torpedoes a year, less than 50% of what were regarded needed for wartime use. Remember, torpedoes only a “vehicle” for the exploder, the sensor that fused the explosion.

Mine problems also distracted BuOrd. BuOrd had more on its plate than just torpedoes.

1941 BuOrd received German torpedoes and reverse engineered them to help with the problem (which became the Mark 18)—but remember, German torpedoes also had design flaws.

BuOrd, knew as early as January 1942 that the exploders had problems, so Magnetic exploders were disarmed. However... the torpedoes Ran too deep to make the contact exploders more effective (and remember, they were flawed in their design as well).

-Another flaw was that the mag fused-torpedoes Exploded too early (Mark 6 mag)—see discussion by Blazich on this point.

-Contacts dudded because of pin jams.(design flaw)

Personality also played a role. Officer named Christie helped design the torpedo and helped resist efforts to correct, at first blame was assigned to the operators, after all, they had little experience with firing these things....nobody had any experience when war began!!!

Blandy (Chief of BuOrd?) and Lockwood correspondence is revealing. The Bureau was busy.

Some subs carried Mark-15s. These were having problems too.

Repair staffs were not familiar with these exploders. Maintenance personnel were almost non-existent. Scuttling the *Hornet*—they had tried to sink her with Destroyers using torpedoes—after damage exposed more torpedo probs. But reason was maintenance not design. 13 November Battles of Guadalcanal. More battle data comes in.

MAINTENANCE SHORTFALLS AND FLAWED NARRATIVES ABOUT USE, obscured the design problem.

So when did the Bureau realize it had a problem. 44% 42-43' of subs skippers relieved. User problems.

Number and prominence of officers in this saga—Blandy, Christie, Lockwood--- show us that innovation and adaptation is “tricky.” What about King, Hart, Halsey, Nimitz, Leahy? (not sure why I wrote this down, what about their role in helping or hindering the solutions?)

3. Trent Hone, independent scholar (but widely recognized as among the premier naval historians writing today)

“Organizing for Rapid Sensemaking: Admiral Nimitz at CINPAC and CINCPAC”

This fit well following in the wake of the case study on the torpedo-exploder problems and the process of solving the problem with bureaucracies at war.

Nimitz’s role—Challenges of organizational leadership and understanding “organizational capacity.” [[comment, here is where Hoffman’s views might have proved most useful since he just published a book on this topic—Mars Adapting]]

Operational and Theater commander, the choice [[FDR and King]] to make him these, Trent believes, accelerated victory. Go back to Nimitz’ War College thesis

He discussed Nimitz's

-energy

-concentration

-speed, efficiency of time

-follow up

[[KUEHN comment--sounds like A.A. Svechin--

"Any strategic decision is in essence unusually simple. It answers the questions, who, where, and when? In reality, strategy knows only three elements of measure: mass, space, and time."

A.A. Svechin, 1926, trans. Bruce Menning, from *_Strategiia v trudakh voenykh klassikov_*, vol. 2, page 7.]]

Nimitz's staff structure was emergent, did not follow a pre-defined path, no template for theater commander staff at that time. He took what he inherited and then molded it to suit his approach and his needs. Retained Husband Kimmel's staff. Also retains folks belonging to Pye (interim CINCPAC after Kimmel relieved).

Nimitz was aggressive, but he has limited capacity in terms of tools to use. How do we come to grips with the enemy? Had Soc McMorris and McCormick—his brain trust.

Nimitz was able to free up capacity by delegating more routine tasks to his chief of staff RADM Drainwell. The idea that a good staff gives the Commander more time to think.

A "bifurcated approach"—tries to keep staff small to keep information diffusion rapid.

Jointness all the way down. Pushes the jointness and any centralization down, to Halsey in SOPAC (south Pacific Command, formerly VADM Ghormley) and to island bases like Noumea.

Halsey and Kinkaid, joint commanders (replace Ghormley and Theobald). They allow Nimitz time to prepare for the main effort in the Central Pacific.

Nimitz wants to move quickly--CJCS wanted Japan to be defeated a year after defeat of Germany (predicted for 1944). So Nimitz will need to move rapidly through the Central Pacific, the most feasible direct approach to Japan.

Reorganizes his staff to do this. Pressure from Army to adopt their staff heavy and centralized approach to do this.

Nimitz and King decide to leave Nimitz dual hatted—that is, as the theater commander for the Pacific, but also as the overall “fleet” commander for all US warships in the broader East Asian war. The Pacific fleet might be the arm of decision, and thus open up opportunities to meet the timeline of defeat of Japan by 1945.

The bifurcated staff for CENTPAC—CINCPOA, uses Army service force logistics officer both staffs?? (not sure of wording here, point is that Army service force logistics officers provide a capability—or capacity in Hone’s phrasing—that Navy does not have with its talent base.)

Nimitz established a further divided command structure in Central Pac—5th Fleet/3rd Fleet. Nimitz and Spruance shared time and vision, shared understanding with Spruance. A more rapid feedback mechanism. Nimitz and invasion of Marshalls. Needs an anchorage and air bases for Army bombers. Wants to do it in one bite. Roi Namur Kwajalein. Flintlock, we can use airfield on Kwajalein. Nimitz overrules subordinates who say the objective is too far. His decision is rewarded with operational success.

Nimitz not only accelerates the campaign—Resistance in Marianas not expected, but July Nimitz

Changes STALEMATE (the precursor invasions of Palaus and western Carolines and Ulithi) to adjust sked for Philippines invasion (PI).

Halsey now in command, raids PI and acceleration of PI operation and frees up amphibious shipping.

Nimitz, realizes Formosa is not practical and in September decides for Iwo and Okinawa. A very dynamic Pac fleet gets tied down in PI.

Flaws in his staff org become exposed. Halsey lacks the same level of understanding that Spruance—Halsey focuses on tactical operations, and risks exhausting the carrier forces. Japanese now adopt the exhaustion/attrition strategy. Japanese change not picked up (even though it is seen at Peleliu)

Accelerating the end. Drops two objectives in ICEBERG (Okinawa), and now begins to adjust his thoughts on OLYMPIC.

We will never know if Nimitz and King would have lobbied to cancel the invasion of

Japan had A-bombs and August Storm not worked.

Big idea—Nimitz and US out organizing, and out organizational-leading the Enemy.

[[Kuehn comment, work of DM Giangreco in Hell to Pay—Inertia of Olympic would have impelled the invasion of home islands forward]]

Callahan---commentary. Best laid plans...."I love a good case study in failure...."

Mark 1-6: The detail and complexity produce a sort of friction in the design of the weapon....

What about mass production of next gen exploders...?

Reporting structures, what were those, how did they work, who read the reports.

Bureau of Aeronautics begged sailors during the war for feedback, what about BuOrd?

Delegate as a term, used with reference to logistics and supplies. What about relegate?

Re: logistics. Advent—of A-bombs? Might Nimitz's system have reached the end of its utility...? Was there a learning curve that took place?

To Hone, Any reason you did not bring in some of the current DOD/Navy vernacular? [not sure of answer, maybe the response was not really....]]

Commentary and questions for Blazich:

Secrecy factor huge—comparative analysis with Japanese torpedo production and testing...Newport is the only game in town.

Prewar reporting system—there were pre-war systems for the torpedoes.

Blazich said Confirmation bias by U.S. Focus on the torpedo delivery system, which was essentially a separate system.

Q. Torpedo station records? These archives currently difficult to access. Hone mentioned Lockwood-Nimitz were buddies, lived across the street from each other, that might have accelerated the fix that eventually came.

What does promotion of Blandy (the guy in charge at BuOrd) tell us about the system?

There were questions about the Torpedo factory--??? Did Labor dispute play a role in production? Research needed.

-Navy, how do we do war termination in Orange?

Norman Friedman piped up during the Q&A--- war termination, always an American problem. Pre-war navies, didn't test enough.

Brought up the British concentration fire (from the earlier panel I already mentioned) and its not being tested.

Political Rhode Island and torpedo political relationship. Congressional delegation, what about those? Sacred cows perhaps?

[[Sorry this one seems so rambling, I really needed to write this up night after but I went to an awards dinner and never appended my notes]]

Panel #3 (actually #6) Transformation of the US Navy in the Late Nineteenth Century

Chair: James C. Rentfrow, National Museum of the United States Navy

1. "Constructor Lenthall's Mahan Moment: 'How Much Better it is to Fight at the Threshold than upon the Hearthstone,'" Stephen C. Kinnaman, Independent Scholar

I came in late to this panel. The title of the lecture/paper captures the argument, that Mahanian thinking was taking place prior to Mahan's publication of these ideas. Occasion was a letter to Secretary of the Navy Gideon Welles to create a seagoing Ironclad (a *La Gloire*) fleet. That it is better to defend forward on the seas than in the littorals (as was the case in war of 1812). Kinnaman was discussing factors that influenced Lenthall's thinking--Crimean War and Royal Navy Experience, as well as Civil War, Merrimac problem with CSA Navy.

-Ironclad Board, Lenthall and his Bureau (BuC&R) were sidelined.

Board was spurred on by *Trent* Affair. Seizure of the British *Trent* on high seas with Confederate envoys on high seas by Wilkes.

Mahanian insight, where did it come from?. Lenthall apprenticed under Joshua Humphreys, went on to design the *Dale* class sloops

Grand tour of European dockyards in 1831-1834. Kronstadt, Copenhagen, Portsmouth, L'Orient. Highlight was his time in Paris visiting French ports. Lenthall brought 300 design drawings with him

when he returned.

Worked with Ericsson on steam sloop *Princeton*. How did Welles react to Lenthall's letter?

Welles ordered monitors and not the seagoing ironclad fleet that Lenthall envisioned. War shaped the decisions. Monadnock class designed by Lenthall. *Virginus* affair—a filibustering operation against Cuba that was something of a 19th Century preview of the Bay of Pigs, many Americans executed by Spanish as “pirates.” Exposed the Navy's lack of capability in a “war scare” with Spain. 1873. Lenthall recalled from retirement to help with ABCD designs for new steel fleet that came in the 1880s.

2. “Albert P. Niblack and the Formation of the Modern US Navy, 1890 to 1917”

Andrew K. Blackley, Independent Scholar

Albert Niblack—often treated as a footnote in histories because of William Sims and Hugh Rodman. For a time was the Chief of the Office of Naval Intelligence and member of the General Board in the Interwar Period.

1880-1923, career, spans a critical period. Niblack commanded one of the first US dreadnoughts, USS *Michigan*, started as a signal officer. Excellent war record in Sp American War and in Philippine Insurgency. 1901 he was appointed inspector of target practice. He surveyed Subic Bay as a possible naval base.

Niblack was a prolific writer. Won two prize essays 1891 & 1896—tended to use previous experience to inform his writing. Very interested in fleet tactics and US Naval Policy.

First prize essay on enlistment training and organization, wanted to elevate the appeal of enlistment with respect to recruiting sailors.

-also recommended, reduce or eliminate the Marine contingent on ships (following in wake of Fullham, who made the same argument).

1896—Tactics of the Ship of the Line in Battle, based on previous work by Foxhall Parker.

Believed that the line abreast was best tactical disposition. Believed in melee tactics (the Nelsonian school of tactics).

Niblack as inspector of target practice—Niblack is often overshadowed in the literature by Sims. (Niblack Papers in E. Carolina archives, also Roosevelt papers for this period from Library of Congress)

Sims narrative, observations of Percy Scott. 1901 N. Atlantic target practice fiasco. Niblack tells Sims about these problems. Niblack was trying to get the inspector of target practice job.

TR becomes President—looks at Sims reports, which are given to Niblack who writes a Memo that validates Sims' reports. Gave this Captain (later RADM) H.C. Taylor, who, as Dewey's adjutant [I refer to Taylor as Dewey's chief of staff/chief of operations in my book *America's First General Staff*], had it promulgated to the senior officers of the fleet.

By April 1902—running out of money for ammo for target (tgt) Practice. Niblack in meantime was appointed inspector of Tgt Practice (ITP). Sept 1902 Niblack retires as ITP due to tuberculosis (TB). A lot of the ground work had been laid by Taylor and Niblack for Sims.

The "dotters"-- guns...continuous aim training was being adopted

More's tube training adapted from British.

Niblack went to recover in NM from TB. Continued to write, tactics of the gun, refinement of earlier work. Ranges still relatively short, 1k-3k yards. Favored an oblique attack but maintain column formation. Hit hardest and hit first. But his work preceded the work of Lanchester about law of squares and hitting power as function of damage to the enemy.

As mentioned, he became Director of Naval Intelligence. Also served with distinction in the Adriatic at the end and during Versailles conference in the Adriatic (See William Sills *Victory without Peace* for Niblack's exceptional activities in that environment).

Bottom line, Niblack probably deserves a lot more credit for his reforms in target practice than he get, and which mostly goes to William Sims.

3. "The Emergence of a New Naval Power: Intelligence Reports from the Spanish Legation in Washington Regarding the Development of the US Navy (1890-1898)."

Pedro Martinez, University INstitute General Gutierrez Mellado (Spain)

Used Reports from the Spanish Intelligence on the US Navy at turn of the century and coast artillery. Use of the Spanish legation and naval attaches. Spanish understood the U.S. Navy quite well prior to their war with us. However, for other reasons this intelligence was not leveraged in a way that helped their actual conduct of operations.

Rentfrow's comments- Lenthall, similar ideas but Mahan was first to achieve notoriety to gain publicity and attention for the ideas of sea power.

Niblack—so much more behind the narrative of Sims, the angry young reformer.

Spanish-American War, Spanish agency in the conflict. Spanish are thinking about who they might fight, thinking intelligently? Question came up of why they behaved as they did, especially Cerverra's cruisers. Bottom line, knowing is one thing, doing another.

Sorry there is not more. Hope you enjoyed. I will try my best to address some of the questions.